

**A METHOD AND APPARATUS FOR DOMAIN TRANSFORMATION
MULTIPLE SIGNAL PROCESSING**

Abstract

Embodiments of an Ethernet transceiver are disclosed. The Ethernet transceiver includes a plurality of digital signal streams, at least one digital signal stream being coupled to another of the digital signal streams. A domain transformer transforms sub-blocks of each of the plurality of the digital signal streams from an original domain into a lower complexity domain. A processor joint processes the transformed sub-blocks of the digital signal streams, each joint processed digital signal stream sub-block is influenced by other digital signal streams sub-blocks. An inverse transformer inverse transforms the joint processed signal streams sub-blocks back to the original domain.